

Introductory Comments:

UK Research Careers Must Swap Pinch Points for Portfolios

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The UK Government's Department for Innovation Universities and Skills (DIUS) has a real concern that research careers are not always perceived to be attractive by the best graduates. This concern led to DIUS to ask me to examine whether this is the case and if so what might be done to improve matters.

The brief was simple: to judge whether UK research careers are functioning as well as they might, with the emphasis on careers. The reasoning was straightforward: if they are not functioning well, this would put the UK at a considerable disadvantage in the fight to get and keep the world's best research talent.

The report concentrates on researchers working in higher education, but it does recognize that the UK's research base is diverse, consisting of researchers not only in academia but also in the public sector, business and industry and increasingly in the third sector. It also recognizes that the UK's research base does not exist in a vacuum as today's researchers are highly mobile and there is intense global competition for the very best researchers.

Since the report was published in October last year the world economic crisis has taken a firm hold with possible consequences for the UK research base. We have already seen evidence of UK business and industry

withdrawing their investment in R&D and government spending is clearly going to be reined in. Though our competitors will have similar problems, they will take action to review and enhance the attractiveness of their research opportunities and career paths. So even in this harsh economic climate, our own system will need to work even harder to attract and retain the best researchers.

The report adopts a longitudinal approach focusing most attention on the early stages of research careers, paying special attention to the influences on pupils' in secondary schools, continuing through the higher education experience, into doctoral research, finally focusing on early and mid-career researchers.

We concluded that, although the current system for building research careers needs no major reforms, action needs to be taken now to address a series of 'pinch points' to ensure that the UK can continue to sustain a vibrant research community in the face of intense activity by our competitors. I identify nine of these 'pinch points' but here I will concentrate on just three overarching issues:

1. Raising Awareness of Research Careers
2. The Transition from PhD to early career researcher
3. Expanding the concept of a research career and encouraging greater transferability between sectors

Raising Awareness of Research Careers

We need to ensure that the idea of a research career is seeded and nurtured from school age. Young researchers also need more encouragement to stay in research careers. One example of best practice can be found in A*STAR, a Singaporean government organisation dedicated to enhancing Singapore's development in Science and Technology. It has established a "Young Researcher Attachment Programme" to attract and nurture talented young people both in Singapore and from around the world.

There are a number of agencies who should be just as active in the UK. Subject associations in all academic disciplines should work in partnership to promote careers in research at an early stage by working more intensively with school teachers to inform them of the possibilities for their pupils. In addition, research councils should work with universities, research institutes, charities and industry to develop a national Research Experiences Programme for undergraduate students. There is also much more that our universities could do to ensure a passion and interest for research flows from teenage years, through undergraduate studies into sustained research careers.

The Transition from PhD to Early Career Researcher

Growth in the total number of postgraduate research students in the UK over the last five to ten years has been only modest and most of that growth can be attributed to non-UK domiciled students. Add to this the increasing burden of student debt and concerns about the future supply of 'home grown' talent become acute.

So how do we ensure that our most promising prospects choose to pursue research as a long-term career?

The influential Roberts Report noted the limited support for postgraduates, both financial and in terms of their academic and personal development. The resulting Roberts Money and the UK Grad Programme (now Vitae) have gone a long way to address these issues. But, in truth, still very little is known about the career choices and progression of doctoral graduates, particularly those working outside of academia.

The review found that careers guidance and personal development provision for research staff was, one the whole, less well developed. Some institutions offer specific preparation and bridging programmes to aid the transition from research student to postdoctoral researcher (with training, mentoring and even dedicated funding packages). Others take a genuinely holistic approach; supporting communities of early-career researchers by providing networking opportunities and representation within institutional structures. The report recommends that the Roberts funding for universities must be sustained over the long term to ensure high-quality researcher development programmes are embedded across the sector.

Expanding the concept of a research career and encouraging greater transferability between different sectors

There is a concerning lack of mobility between the various forms of research career. The UK's research base is diverse, consisting of researchers in academia, the public sector, business, industry and the third sector but there

seems to be relatively little movement between each of these separate research career paths. More should be done to enable our researchers to have portfolio careers where they can move easily in and out of each of these sectors. This would not only add variety and flexibility to individual research career paths but would also greatly facilitate the transfer of research knowledge between those sectors.

My report offers a number of suggestions to try and break down these barriers at as early a stage as possible in research careers. It calls on government to consider the introduction of industry match-funding awards for early career researchers. The report also recommends that Government should establish a working group comprising senior stakeholders with an interest in university-business collaboration, to specifically consider how to improve transferability of researchers.

that, within this setting of competition on a world-wide scale, the location of elite senior researchers is pivotal. To attract and retain that elite we need to do more in the foothills in order to get to the heights.

My report has proposed a number of interventions which, if implemented, would help improve the supply of high quality researchers in the UK. For the sake of the UK research base 15 years from now, it is imperative that we start to build on what is already in place and that we start to do so now.

Researcher Development Studies

Researcher development studies can form the foundation for a shift in the sector towards good practice which will ultimately lead to more sustainable career paths for researchers. Such studies also serve to provide a robust evidence base to inform high quality training and development for researchers and their managers (and help secure sustained funding for such activities) and ensure policy formation is aligned with best practice.

Conclusion

The entire review was conducted from the clear perspective that research is a global industry. The report recognizes